



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

October 25, 2021

Mr. Roberto Puga, P.G.
Principal of Project Navigator Ltd, solely in its capacity as Trustee for
HOVENSA Environmental Response Trust
1 Estate Hope
Christiansted, Virgin Islands 00820

Ms. Carey Guilbeau
HOVENSA Environmental Response Trust
Trust Representative & Technical Program Manager
PMB 245
6002 Diamond Ruby, Suite 3
Christiansted, VI 00820-5226

Re: Response to EPA's July 29, 2021 Comments Regarding Technical Review of the March 2, 2021
Second Semiannual 2020 Corrective Action Status Report, dated August 30, 2021
Former HOVENSA, L.L.C. Site, St. Croix, U.S. Virgin Islands, EPA
RCRA I.D. No: VID980536080

Dear Mr. Puga and Ms. Guilbeau:

The U.S. Environmental Protection Agency (EPA) has reviewed the Response to EPA's July 29, 2021 Comments Regarding the Technical Review of the March 2, 2021 Second Semiannual 2020 Corrective Action Status (CAS) Report, dated August 30, 2021, for the former HOVENSA LLC facility, located in St. Croix, US Virgin Islands. HOVENSA ERT originally submitted its Second Semiannual 2020 CAS report on March 2, 2021. EPA reviewed this document and provided comments in a letter dated July 29, 2021. This letter identified the need to thoroughly identify leaks and repairs occurring during each reporting period, as well as the source of any new contamination. The comments also noted the need to update the Quality Assurance Project Plan. ERT provided a response to EPA's comments, in a letter dated August 30, 2021. We have reviewed ERT's response to EPA comments in parallel with the First Semiannual 2021 CAS Report submittal on August 30, 2021 and have enclosed the following additional comments. For all other comments, EPA acknowledges ERT's response, and we have no further remarks.

Should you have any questions or would like to discuss this matter further, I can be reached at 212-637-3703, or via email at vargas.ricardito@epa.gov.

Sincerely,

Ricardito Vargas
Project Manager

EPA Region 2
Land and Redevelopment Programs Branch
New York, NY 10007-1866

Enclosure

cc: Austin Callwood, Director, VIDPNR-DEP via email
Brad Martin, Toeroek via email

**Review of ERT Response to
EPA's July 29, 2021 Comments Regarding the
March 2, 2021 Second Semiannual 2020 Corrective Action Status Report
Dated August 30, 2021**

EPA General Comment 1:

Identifying and documenting leaks and repairs: Based on a discussion between the HOVENSA ERT and EPA on July 8, 2021, EPA's understanding is that only scheduled repairs of tanks and equipment have been included in Attachment 8 (Activities Conducted by Limetree Bay Terminals), and that there may have been other releases and repairs which are not accounted for in Attachment 8. Please note that according to Attachment III-4/5, Section A.5. of the 03-25-2015 modification to the RCRA Part B Operating Permit (originally issued 11-01-1999), any repairs to product lines shall be documented and submitted to EPA in the CAS Report following such repair. Additionally, please note that according to Attachment III-4/5, Section B.6 of that permit modification, any repairs to oily water sewer lines (OWS) lines shall be documented and submitted to EPA in the CAS Report following such repair. Finally, please note that Attachment III-4/5, Section C.8, Any repairs [to tanks] shall be documented and submitted to EPA in the CAS Report following such repair. Hence, please submit all records of releases and repairs to product lines, oily water[sic] sewer lines, and tanks in semi-annual Corrective Action Status reports.

Additionally, although newly identified contamination is being addressed in Section 3 (New Occurrences of PSH) of the report, the source of that contamination is not always clear. In future semi-annual reports, please also identify all newly identified sources of contamination.

ERT Response:

The ERT and Limetree met on August 16, 2021 to discuss EPA's request for: 1) information on releases from and repairs to oily water sewer lines, underground product lines and tank floors, and 2) EPA's request to clarify the source of newly identified contamination discussed in Section 3 of the Corrective Action Status reports.

The ERT and Limetree agree with EPA that items A.5., B.6., and C.8. of Attachment III-4/5 of the modified Permit that require ongoing and routine repairs to the oily water sewer lines, underground product lines and above ground tank floors need to be documented and submitted in the corresponding CAS report following such repair. These requirements became effective on March 30, 2015, when EPA issued a letter approving a Class 3 Modification of the Permit. Subsequently, on September 15, 2015, HOVENSA, L.L.C. filed bankruptcy, and Limetree Bay Terminals, LLC purchased the terminal and above-grade refining assets per the terms of the January 4, 2016 Asset Purchase Agreement. Limetree continued to provide the oily water sewer, underground piping and tank repair/maintenance data for the CAS reports utilizing the same tables HOVENSA, L.L.C. submitted. These tables include testing and repair information related to the oily water sewer system and underground lines, and inspections dates for applicable tank inspections. In an oversight, these tables were not updated to include repair information related to tanks, as required by the 2015 Permit modification. Limetree will gather the tank inspection and repair information as of March 30, 2015 and summarize this information in an addendum to the August 30, 2021 Semiannual CAS report.

The ERT and Limetree has routinely met to discuss the results of the "quarterly fluid level gauging events" conducted at the Site. During the call held to discuss the June 2021 data, Limetree indicated that

additional review and investigation of potential sources was being conducted. This information will be compiled and submitted as an addendum to the August 30, 2021 CAS report.

The addendum to the August 30, 2021 CAS report will be submitted no later than November 15, 2021. Due to multiple changes within the Limetree organization, including the reduction of workforce, an earlier submittal might not be possible, however, Limetree has stated that the tank repair information and/or the source review information will be submitted sooner than November 15, if feasible to do so.

EPA Response:

We concur with ERT that the addendum to the August 30, 2021 CAS report will be submitted no later than November 15, 2021 and include the requested tank inspection and repair information. Please note that numerous pump mechanical malfunctions, pump shutdowns, lodged pumps, and other problems still exist at the site with no clear path forward or schedule for completing repairs. Please revise the operations, maintenance, and monitoring at the site to include a path forward for these repairs.

EPA General Comment 2:

A bioremediation study was performed in Remediation Area (RAA) 6B and results provided in Attachment 7. Results indicate that methanogenesis in groundwater may be the predominant process in this area of the site. Examination of Figure 2.5 indicates that only two wells in this area are exploring the use of BaroBall™ technology. It is unclear why more wells were not identified for trying to explore the use of this technology. It is also unclear why the study did not include an evaluation of vadose zone gases as a means to assess the potential for enhancing biodegradation in the vadose zone (please see Specific Comment 2, below for more details). Please provide additional detail as requested and proposed next steps to be taken to improve the ongoing corrective action activities.

ERT Response:

The monitored natural attenuation (MNA) evaluation was performed at the discretion of the ERT to determine baseline conditions surrounding the occurrence of benzene at well 667. This baseline was determined in the event the dissolved concentrations at well 667 were to increase to levels above the Corrective Measures Implementation (CMI) goals in the future. Per the July 21, 2009 Area of Concern (AOC) Corrective Measures Implementation (CMI) workplan, well 667 is a plume well for RAA 6B. This study was not conducted to determine the efficacy of any potential remedial technologies and was not intended to present a path forward for additional corrective actions or to evaluate the use of BaroBalls™ at the Site. RAA 6A is currently in post-corrective action monitoring; corrective action is no longer conducted in this area and no plan to expand the use of BaroBalls™ is planned.

Upon further evaluation of the workplan requirements and the current status of RAA 6B, the ERT determined the BaroBalls™ should be removed from RAA 6B, as corrective measures are not required in the current timeline for RAA 6B (i.e., the area is in post-corrective action monitoring and corrective action is no longer conducted at RAA 6B).

The two Baroballs™ in RAA 6B (well 667 and well 626) were initially installed by HOVENSA sometime between 2008 and 2010 and have remained in use since that time. The ERT is uncertain of what criteria was used to select the specific locations. It is understood however, the use of barometric bioventing, as stated in the September 22, 2010 Supplemental Remedial Technology Study, is most effective as a secondary polishing step following other remedial actions once PSH is removed.

BaroBalls™ are identified as a “Feasible Remedial Option” that could be applicable for use in RAA 6B (as well as other areas) in the Supplemental Technology Study. The supplemental study was requested by EPA on March 12, 2010 as a part of CMI workplan review. Although identified as a potential option, BaroBalls™ are not specifically identified for implementation as corrective measures for RAA 6B in the 2009 CMI Workplan.

EPA Response:

Results of a monitored natural attenuation (MNA) study indicate that methanogenesis in groundwater may be the predominant process in some areas of the site. It is still unclear why the study did not include an evaluation of vadose zone gases to assess the potential for enhancing biodegradation in the vadose zone under portions of the site. Please provide additional detail on the timetable for providing more information concerning the use of enhanced MNA in the future at the site as noted in Section 4, Page 87 of the First Semiannual 2021 CAS Report.

EPA Specific Comment 2: Section 2.1, Page 9, 4th paragraph

In this section it is noted that the Baroballs™ [sic] is being used for barometric bioventing. However, it is unclear what this means as BaroBall™ technology is generally used for passive soil vapor extraction and enhancing in situ bioremediation. According to the manufacturer, for BaroBall™ to work as a passive vapor extraction tool the inside well pressure differences need to be 7 to 10 millibars above atmospheric pressure before the valves are triggered to open in a passive venting mode. As no barometric pressure difference data is provided in the CAS Report or the associated attachments, it is assumed that the BaroBall™ technology is being used to shut in well gases at the site. Please expand on this and verify whether this is a correct assumption. In addition, it is unclear why the bioremediation study did not consider the collection of soil gas data. Given that the BaroBall™ technology is already being employed on site, biodegradation assessment should be expanded to include soil gas data with this data used to evaluate the potential for the employing enhanced bioremediation methods. Please provide future steps to be employed that include assessment of soil gas for the assessment of bioremediation.

ERT Response:

Across the site, BaroBalls™ are installed in sixty-six (66) wells to facilitate passive barometric bioventing. A BaroBall™ contains a one-way valve system that creates pumping of air and vapors due to changes in ambient barometric pressure. Baroballs™ are constructed in two different configurations – one that passively removes vapors from the subsurface to the ambient air (i.e., vapor extraction) and one that contains an inverted assembly that introduces and traps ambient air into the subsurface for stimulation of biodegradation (i.e., bioventing).

HOVENSA installed the inverted type that introduces ambient air into the formation surrounding the well, enhancing biodegradation within the vadose zone. As noted by EPA, BaroBalls™ function as ambient atmospheric barometric pressures change due to diurnal fluctuations and weather events. Specifically, the “cracking pressure” for BaroBalls™ is as little as one millibar change in atmospheric pressure. This contrasts with what is noted above in EPA specific comment #2 that is relative to “other” check valves cited in the product literature, where a pressure differential of greater than 7 to 10 millibars is required to overcome the cracking pressure. BaroBalls™ operating in bioventing mode serve to increase oxygen supply in the subsurface (i.e., vadose zone and capillary fringe) for increased biodegradation capacity. BaroBalls™ are more effective in areas where the depth to the well screen location is very deep or in areas that have an impermeable overburden (e.g., concrete or asphalt surface).

The BaroBalls™ were initially installed by HOVENSA beginning in 2008 and have remained in use since that time. Although the locations that these were installed in have been maintained, active monitoring of the conditions induced by the BaroBall™ presence is not performed (i.e., pressure differential or soil gas monitoring). The ERT is uncertain what initial monitoring and evaluation was performed, if any, by HOVENSA during the initial BaroBall™ installation, and has yet to locate any documentation specific to their implementation. As such, other than typically being installed where either PSH or DPH was observed, the ERT is uncertain of what criteria was used to select specific locations.

HOVENSA's September 22, 2010 Supplemental Technology Study identifies BaroBalls™ as technologies in use as corrective measures at RAA 1A, RAA 9A and RAA 9D. RAA 6B is not listed in the 2010 study. As noted above, the ERT is uncertain what initial monitoring and evaluation, if any, was performed.

The ERT suggests further discussion with EPA regarding the use of BaroBalls™ at the Site and EPA's request for additional assessment. HOVENSA's wind-down budget did not include additional assessment for the use of BaroBalls™, and as such, any additional assessment would impact the ERT's ability to complete other required tasks.

EPA Response: The location and planned use for 66 wells equipped with BaroBall™ to facilitate passive barometric venting are currently identified in the First Semiannual 2021 CAS Report as requested. However, ensure the additional information noted in Section 2.1, Page 10 in the second paragraph concerning how the BaroBall™ will be optimized and managed at the site will be submitted. In addition, please provide sufficient information to confirm how and where the Baroballs™ are deployed at the site and why they are being used in the configuration they are in a particular portion of the site. EPA is open to discussing this further if necessary.